PHYS-644

Lecture series on advances in Physics

Lingenfelder Magalí, Various lecturers

Cursus	Sem.	Type
Physics		Opt.

Language of teaching	English
Credits	2
Session	
Exam	Oral
Workload	60h
Hours	**28**
Courses	28
Number of positions	**30**

Frequency

Every year

Remark

Next time: Fall

Summary

This course gives a comprehensive view of the main research topics being explored in the different sections of Physics, and the highlights from EPFL beyond the specific topic of each PhD. The students are guided through the topics starting from the basics to the highlights of each section.

Content

The course will consist of 12-14 scientific talks per semester. The course is intended to cover most areas of Physics being explored at EPFL and rotate each semester with representative groups from the different sections. Eventually, all the groups will get the chance to present their research. The students are expected to take their own notes and do literature research concerning the background of the talks. Attending this course will help the students create more connections and find synergies with other students doing their PhD in Physics at EPFL.

This will be a weekly course running each semester, total 28h with an exam at the end (2 credits).

Each of the invited speakers will deliver two 45-minute presentations:

- first, a tutorial lecture on the fundamental principles of their research topic (the basics)
- followed by a talk on their current research (focusing on the highlights). Total: 2h lecture, including Q&A.

Confirmed speakers Fall 2021:
Prof. Jean-Philippe Ansermet
Prof. Mitali Banerjee
Prof. Fabrizio Carbone
Prof. Giuseppe Carleo
Prof. Hugo Dil
Dr. Nils Johan Engelsen
Prof. Christopher Galland
Prof. Andreas Pautz
Prof. Riccardo Rattazzi
Prof. Christian Theiler
Prof. Oleg Yazyev
Prof. Lenka Zdeborová
Expected student activities:
Participation in class and discussion (students will host the sessions)
Bibliographic research

Assessment methods:
Oral exam

Note

The course is intended to run each semester fall, rotating speakers.

Keywords

physics, condensed matter, biophysics, astrophysics, quantum science, particle physics, plasma physics

Learning Prerequisites

Recommended courses

General background in Physics at the Master level (3rd year)

Learning Outcomes

By the end of the course, the student must be able to:

- Interpret topics of current research in Physics by learning about the latest developments directly from the researchers shaping their respective fields
- Have a comprehensive knowledge of the main physics research topics being explored at EPFL, beyond the specific topic of their PhD
- Communicate with professionals from different sections of Physics
- Identify synergies and foster â##bottom-upâ## collaborations across different fields
- Identify complementary skills that could strengthen the interaction and creativity of their own PhD research

Expected student activities

Resources

Bibliography

research papers from each group presenting during the current semester